**NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PER. \_\_\_\_\_\_**

**DNA Structure & Replication – Test**

**STUDY GUIDE**

**Use Fig. 12-1 Below to answer questions 1, 2 3 & 4**

1. The object marked “**X**” in Fig. 12-1 Below is a \_\_\_\_.

**NUCLEOTIDE**

2. The object marked **“Y”** in Fig 12-1 is a \_\_\_\_.

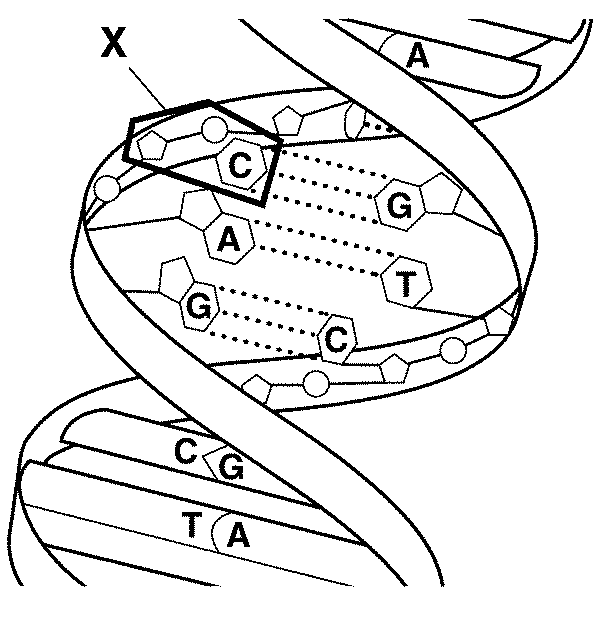
**NITROGEN BASE**

3. Figure 12-1 shows the structure of a(an)?

**DNA**

4. The object marked “**Z**” in Fig. 12-1 is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**HYDROGEN BOND**

****

**Z**

**Y**

**Figure 12-1**

5. What makes up a n nucleotide found in DNA?

**DEOXYRIBOSE, PHOSPHATE AND 1 OF 4 NITROGEN BASES**

6. What is the base-pairing rule?

**ADENINE GOES WITH THYMINE**

**GUANINE GOES WITH CYTOSINE**

7. DNA is copied during a process called?

**REPLICATION**

8. In eukaryotes, DNA is located in the \_\_\_.

**NUCLEUS**

9. What must occure before a DNA molecule can be replicated?

**DNA MUST UNWIND**

10. What makes up a DNA molecule?

**NUCELOTIDES**

11. The enzyme which breaks the hydrogen bonds during replication is \_\_\_\_\_.

**DNA POLYMERASE**

12. Because of base-pairing, we say that the two DNA strands are \_\_\_ to each other.

**COMPLIMENTARY**

13. If an original strand of DNA has the sequence CTAGGT, what will the sequence on the new strand?

**GATCCA**

14. DNA is tightly wrapped around \_\_\_\_\_\_\_.

**HISTONES**

15. DNA replication results in two DNA molecules which contain one \_\_\_ and one \_\_\_ strand.

**NEW, OLD**

16. The woman who had her research taken is \_\_\_\_.

**ROSALIND FRANKLIN**

17. In eukaryotes, DNA is unzipped during replication by the enzyme \_\_\_\_.

**DNA POLYMERASE**

18. In what year did Watson & Crick win the Nobel prize for their model of DNA?

**1953**

19. The Watson and Crick model of DNA is a(an) \_\_\_\_\_\_\_, in which two strands are wound around each other.

**DOUBLE HELIX**

20. Chromatin contains proteins called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**HISTONES**

21. Describe the structure of a DNA molecule.

**DOUBLE HELIX**

22. How many chromosomes are in a human diploid cell?

**46**

23. During DNA, the molecule must be unzipped. What must be broken to “unzip” DNA and what is the name of the enzyme that does this task?

**HYDROGEN BONDS, DNA POLYMERASE**

24. What did Rosalind Franklin do to research the shape of the DNA molecule?

**X-RAYS**

25. What is the difference between nucleotides? Name those things that are different.

**THE BASES ARE DIFFERENT – ADENINE, THYMINE, GUANINE & CYTOSINE**

26. Briefly describe the process of DNA replication.

**DNA molecules unwind when hydrogen bonds are broken. Base-pairing creates the two new strands – Each “new” double-helix of DNA contains 1 original strand and 1 new strand.**

27. What are the differences in DNA structure, location and number of chromosomes between prokaryotic cells and eukaryotic cells. Give examples.

**PROKARYOTIC DNA IS SINGLE STRANDED AND CIRCULAR. SINCE PROKARYOTES DO NOT HAVE A NUCLEUS, THE DNA IS LOCATED IN THE CYTOPLASM. EXAMPLE: BACTERIA.**

**IN EUKARYOTIC CELLS, THE DNA IS DOUBLE STRANDED AND HAS THE FORM OF A DOUBLE HELIX. DNA IS LOCATED IN THE NUCLEUS OF A EUKARYOTIC CELL. EXAMPLE: ANIMAL CELL**